

DOCKET NO.: IBIS0056-100 (IBIS-0312)
SERIAL NO.: 09/678,434

PATENT
FILED:10/03/2000

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1. (currently amended). A self-dispensing system for dispensing a measured quantity or volume of a sample comprising:

one or more disposable storage devices for holding a sample to be dispensed;
a dispensing mechanism connected to each of said one or more storage devices, said dispensing mechanism being in dispensing communication with said storage device for precisely dispensing a measured quantity of said sample from said storage device, wherein said sample passes through a filter; and

a driving mechanism internal to said dispensing mechanism that drives said dispensing mechanism thereby dispensing said sample.

Claim 2. (currently amended). The self-dispensing system of claim 1, wherein said one or more disposable storage devices comprises is-a multi-well plate, wherein each of said wells of said multi-well plate has a corresponding dispensing mechanism.

Claim 3. (original). The self-dispensing system of claim 2, wherein said multi-well plate further comprises a standard microtiter plate having a plurality of wells on evenly spaced centers.

Claim 4. (currently amended). The self-dispensing system of claim 2-claim 3, wherein said standard microtiter plate further comprises one or more of a 4-well plate, a 24-well plate, a 96-well plate, a 384-well plate, a 1536 well plate, and a 9600-well plate

Claim 5. (currently amended). The self-dispensing system of claim 2-claim 4, wherein said standard microtiter plate further comprises one or more of a 96-well plate with wells on about 9mm centers having a capacity of about 30 microliters to about 1500 microliters and a 96-well plate with wells on about 1mm centers having a capacity of about 1 microliters.

DOCKET NO.: IBIS0056-100 (IBIS-0312)
SERIAL NO.: 09/678,434

PATENT
FILED:10/03/2000

Claim 6. (original). The self-dispensing system of claim 1, wherein said storage device comprises:
a reservoir for holding said sample; and
at least one opening in said reservoir for communicating a sample between said reservoir and said dispensing mechanism.

Claim 7. (original). The self-dispensing system of claim 6, wherein said storage device comprises a collapsible reservoir.

Claim 8. (original). The self-dispensing system of claim 6, wherein said storage device comprises a semi-rigid reservoir having an dispensed volume replacement mechanism for replacing a volume equal to a volume of said measured quantity of said dispensed sample.

Claim 9. (withdrawn). The self-dispensing system of claim 1, wherein said dispensing mechanism is a time and pressure type pump.

Claim 10. (original). The self-dispensing system of claim 1, wherein said dispensing mechanism comprises a positive displacement pump-type dispensing mechanism capable of precisely and reproducibly dispensing a measured quantity of said sample.

Claim 11. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism is reproducibly dispenses a reproducible measured in-volume for each of said dispensed measured quantity of said sample to an accuracy of about 5 microliters.

Claim 12. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism is reproducibly dispenses a reproducible measured in-volume for each of said dispensed measured quantity of said sample to an accuracy of about 1 microliters.

Claim 13. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism is reproducibly dispenses a reproducible measured in-volume for each of said dispensed measured quantity of said sample to an accuracy of about 0.5 microliters.

Claim 14. (currently amended). The self-dispensing system of claim 1, wherein said dispensing mechanism is reproducibly dispenses a reproducible measured in-volume for each of said dispensed measured quantity of said sample to an accuracy of about 0.1 microliters.

DOCKET NO.: IBIS0056-100 (IBIS-0312)
SERIAL NO.: 09/678,434

PATENT
FILED:10/03/2000

Claim 15. (original). The self-dispensing system of claim 10, wherein said positive displacement pump-type dispensing mechanism further comprises:

an inlet valve having an inlet opening for receiving said sample to be dispensed from said storage device;

an actuator fluidly connected to said inlet valve for dispensing said sample; and

an outlet valve fluidly connected to said actuator for receiving and controlling a flow of said dispensed sample from said actuator.

Claim 16. (currently amended). The self-dispensing system of claim 10, wherein said positive-displacement pump-type dispensing mechanism further comprises:

an inlet valve selectively movably moveable between an open position wherein said inlet valve allows a flow of said sample from said storage device to said actuator and a closed position wherein said inlet valve prevents a flow of said sample from said actuator back into said storage device;

an actuator having a suction stroke that draws a sample from said reservoir as said actuator moves in a first direction, and a discharge stroke that pushes said sample out as said actuator moves in a second direction; and

an outlet valve which is selectively movable between an open position wherein said outlet valve allows said sample to be dispensed on said discharge stroke and a closed position wherein said outlet valve prevents air from entering said actuator.

Claim 17. (original). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a cow udder type of dispensing mechanism.

Claim 18. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a membrane pump type of dispensing mechanism.

Claim 19. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a embedded balls type of dispensing mechanism.

Claim 20. (withdrawn). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a two-dimensional pump type of dispensing mechanism.

DOCKET NO.: IBIS0056-100 (IBIS-0312)
SERIAL NO.: 09/678,434

PATENT
FILED:10/03/2000

Claim 21. (**withdrawn**). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a rotary valve type of dispensing mechanism.

Claim 22. (**withdrawn**). The self-dispensing system of claim 10, wherein said dispensing mechanism comprises a steam engine type of dispensing mechanism.

Claim 23. (**original**). The self-dispensing system of claim 1, further comprising a filter disposed between said storage device and said dispensing mechanism.

Claim 24. (**currently amended**). The self-dispensing system of claim 1, wherein said self-dispensing storage device, with its sample, are freezable to at least about -20C, and is capable ~~is-of~~ being thawed and dispensed.

Claim 25. (**original**). The self-dispensing system of claim 1, wherein at least said storage device and said dispensing mechanism are disposable after said sample has been completely dispensed.

Claim 26. (**canceled**).

Claim 27. (**original**). The self-dispensing system of claim 1, wherein said driving mechanism activates one or more of said dispensing mechanisms corresponding to said one or more storage device at a time.

Claim 28. (**original**). The self-dispensing system of claim 1, further comprising an automated system having one or more robots for positioning said self-dispensing storage device with respect to a workstation or another storage device and a controller for initiating a dispensing operation of said sample by said self-dispensing storage device.

Claim 29. (**canceled**).

Claim 30. (**canceled**).

Claim 31. (**currently amended**). A self-dispensing system ~~for transferring samples from one self-dispensing storage device to another self-dispensing storage device or a workstation comprising:~~

a first self-dispensing storage device comprising:

a storage device having one or more reservoirs for holding a sample to be dispensed;

DOCKET NO.: IBIS0056-100 (IBIS-0312)
SERIAL NO.: 09/678,434

PATENT
FILED:10/03/2000

one or more corresponding dispensing mechanisms connected to and in dispensing communication with each of said one or more reservoirs of said storage device;

a second self-dispensing storage device comprising:

a storage device having one or more reservoirs for holding a sample to be dispensed;

one or more corresponding dispensing mechanisms connected to and in dispensing communication with each of said one or more reservoirs of said storage device;

a driving mechanism for driving said dispensing mechanism of said first self-dispensing storage device; and

wherein a precise and reproducible measured volume of said sample is dispensed from said one or more reservoirs of said first self-dispensing storage device to said one or more reservoirs of said second self-dispensing storage device.

Claim 32. (original). The self-dispensing system of claim 31, further comprising a robotic system having one or more robots for positioning said first self-dispensing storage device in relation to said second self-dispensing storage device.

Claim 33. (original). The self-dispensing system of claim 32, wherein said first self-dispensing storage device is positioned over said second self-dispensing storage device.

Claim 34. (original). The self-dispensing system of claim 32, wherein said one or more robots have autonomous positioning and transferring features for locating said robots and said onboard self-dispensing storage devices with respect to one another and for dispensing said measured volume of said sample.

Claim 35. (canceled).

Claims 36 - 42. (canceled).